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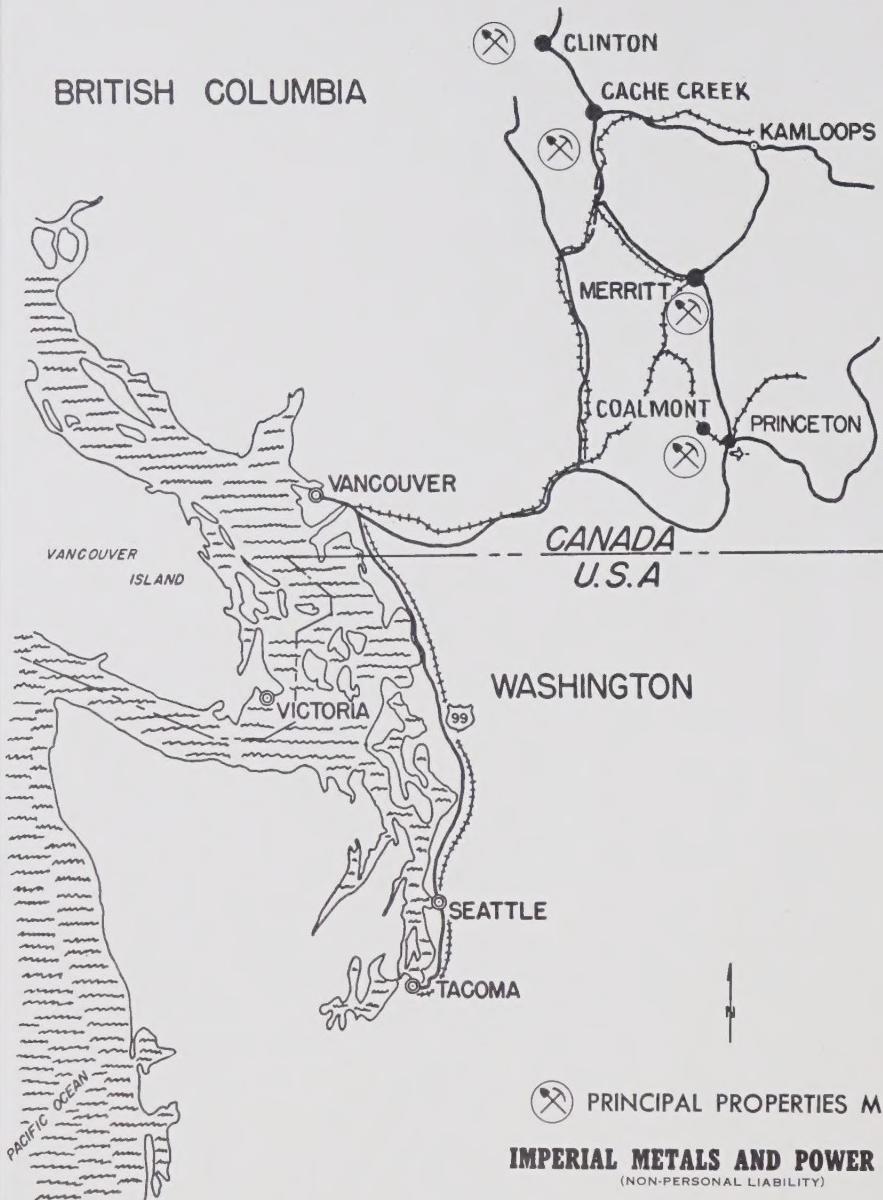


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IMPERIAL METALS AND POWER LTD.  
(NON-PERSONAL LIABILITY)  
BRITISH COLUMBIA - CANADA

FOURTH ANNUAL REPORT  
FOR THE PERIOD ENDING AUGUST 31, 1964

BRITISH COLUMBIA





## IMPERIAL METALS AND POWER LTD.

(Non-Personal Liability)

(Incorporated in British Columbia)

*Registered & Head Office*

230 W. Broadway  
Vancouver 10, B.C.

### DIRECTORS

E. C. Gordon.....	West Vancouver, B.C.
Neil Howard McDiarmid.....	West Vancouver, B.C.
Edward J. Martin.....	West Vancouver, B.C.
R. C. Spall.....	West Vancouver, B.C.
T. D. L. White.....	North Surrey, B.C.

### OFFICERS

Neil Howard McDiarmid.....	President
R. C. Spall.....	Vice-President—Engineering, Marketing and Research
E. C. Gordon.....	Vice-President—Manager, Basic Carbonate Division
Edward J. Martin.....	Secretary and Treasurer

*Registrar and Share Transfer Agent*  
The Guaranty Trust Company of Canada  
Vancouver, Canada

*Solicitors*

Lawrence, Shaw, Stewart and McLoughlin, Vancouver, B.C.

*Auditors*

Frederick Field & Co., Chartered Accountants  
Vancouver, B.C.

**IMPERIAL METALS AND POWER LTD.**  
(Non-Personal Liability)

**PRESIDENT'S REPORT TO THE SHAREHOLDERS**

We are pleased to report that considerable progress has been made by the Company during the year and this report reviews the progress to date.

**Lodestone Sponge Iron Project**

**Lodestone Iron, Coalmont Coal and Princeton Limestone**

Your Company has for some time been intensively studying, developing and preparing for the utilization of the basic metallic raw materials within a seven-mile radius of Coalmont, B.C., near the village of Princeton. These resources of coal, iron and limestone are ideally situated for the production of refined iron in many alternative forms. The grouping shows: (1) a low concentration deposit of high grade magnetite on Lodestone Mountain, (2) a large bed of bituminous "C" steam coal on the lower slopes of the same mountain, and (3) a high quality limestone deposit about 13 miles away from both. The attendant economies in manufacturing add up to a tremendously attractive financial picture.

**Lodestone Iron Ore**

Magnetite was known to exist on Lodestone Mountain prior to 1906. Over the years, the ground has been staked many times, but never before were both the coal and iron under unified ownership.

The work done during the last five years has indicated that Lodestone Mountain contains enough iron to support a programme for 1 million tons plus, of iron production per year for at least 30 years or more. This conclusion is supported by diamond drilling, surface sampling, and ground magnetometric surveys. These studies revealed that the deposit can be readily mined by low-cost open pit methods.

In tests conducted by the Department of Mines and Technical Surveys at Ottawa, it was confirmed that the Lodestone iron ore is concentratable by magnetic separation to produce a magnetite concentrate containing 66.4% iron.

The detrimental impurities commonly existing in iron ores are very low in the Lodestone ore. For example, the phosphorus content at 0.022% phosphorus pentoxide is well below the maximum allowed, as is the sulphur content at 0.067%. Tests carried out at Ottawa demonstrated that the titanium in the ore is not chemically combined with the iron but is present as ilmenite. This can be reduced by controlled magnetic separation. Recent work on the Lodestone ore by Carpco Research and Engineering, Inc. of Jacksonville, Florida, has confirmed this fact. Carpco is a recognized authority on magnetic separation.

The work to date has further demonstrated beyond doubt that Lodestone is a vast deposit which can be readily concentrated to produce, at very low cost, a magnetite concentrate that in itself is a marketable product. However, in addition, we have within 5 miles of the peak of Lodestone Mountain (situated about 3,000 feet vertically below the iron deposit), a strategic source of low cost energy and carbon in the form of coal.

**Blakeburn Coal Deposit**

The coal deposit at Blakeburn was discovered about the beginning of the century and has in the past been worked on a commercial basis by two companies, by underground mining on a seam 100 feet thick, dipping at approximately 30 degrees, and by open pit method in 1957, producing about 200,000 tons for Granby Consolidated Mining and Smelting Company. From Government surveys and work done by Imperial, there is conclusive evidence that this deposit contains many millions of tons of coal of adequate quality to support an iron producing facility for many years to come. The coal has a heating value in the order of 10,000 to 12,000 B.T.U.'s per lb. and for several years will continue to lend itself to open pit recovery. The old mine in one place went down dip for approximately 3,000 feet. The whole basin is 38,000 feet around.

**Limestone at Princeton**

Your Company will mine for its own account a readily accessible limestone deposit within six miles of the village of Princeton, B.C. This deposit contains crystalline limestone analyzing 97% calcium carbonate of adequate quality for use in conjunction with the coal and iron ore for the production of iron or steel.

## **Conversion Process**

The final key to the successful commercial operation utilizing the iron ore, limestone and coal of the Coalmont area, has been the acquisition of a conversion process which has favourable economics and is technically sound.

Nearly all of the offered conversion processes have been investigated but most of them have been found to be unsuitable either from the technical or economic point of view. During this period, the work being done by The Steel Company of Canada and LURGI of Germany, developing a direct reduction process for the production of sponge iron, was closely watched. Early this summer Stelco advised the Company, through their Consultants, Hains Engineering Company Limited in Toronto, that they had completed the development, and are satisfactorily using, the SL Process, for the production of sponge iron. The method utilizes two-thirds coal and one-third natural gas for energy and carbon requirements. The application of their apparent operating costs to this Company's raw materials revealed, unmistakeably, that Imperial will be the lowest cost producer of sponge iron in North America.

On September 24th of this year, 1,000 lbs. of the Lodestone iron ore and 320 lbs. of the Coalmont coal were transmitted to LURGI in Frankfurt, Germany, for testing in their small scale SL unit. It is expected that the results of these tests will be available very shortly.

## **Available Markets for Sponge Iron**

Negotiations with a major steel producer on the west coast, to supply 200,000 tons per year of sponge iron, are presently in progress. These negotiations have progressed to the extent that the technical people have requested samples for testing purposes, and should these samples meet their specifications, it is felt that a workable contract would be feasible.

In addition to the above mentioned steel producer as a potential customer for the sponge iron, there are mills in Portland, Oregon, with a potential demand of approximately 100,000 tons per year and other companies in the San Francisco area. Your Company has also been advised by officials of a major copper producer that they would be interested in entering into a contract to purchase between 30,000 and 50,000 tons of sponge iron annually for their copper operations. At the present time, this producer is paying \$42.00 per ton for scrap "tin" cans for the available iron needed in their copper reduction process. It is apparent that the availability of sponge iron as a replacement for these "tin" cans, would be of great advantage economically.

In consideration of the voracious appetite of the Japanese steel industry for iron products, we have been in consultation with agents of major Japanese steel producers. Indications are that a very favourable climate exists in this country as well, for the development of markets for Lodestone sponge iron.

It should be emphasized that the utilization of sponge iron by the steel industry for the production of steel is in the early adolescent stage and it can not be expected that any steel producer would be prepared to enter into a contract immediately for a definite quantity of sponge iron. Prior to such a contract, numerous tests will have to be conducted by the steel producer on the sponge iron in question to determine the best composition and shape of product best suited for his particular furnace requirements. Market investigations to date have revealed that a very favourable climate exists for a close working liaison between your Company and potential sponge iron consumers in both west coast North America and Japan, to develop long-term contracts.

In summary, therefore, the work to date has revealed that your Company controls, in the Coalmont area of British Columbia, raw materials of sufficient quantity and quality to support the lowest cost sponge iron production in North America, if not in the world, and the embryo of a steel producing complex in British Columbia. Another plus factor is that these raw materials are located very close to the C.P. Railway and only 270 miles by rail to Seaboard.

## **Merritt Coal**

No work has been done during the year. All taxes have been paid and these coal measures are in good standing.

## **Beryllium — Blaisdell Lake, N.W.T.**

No work has been done during the year. These claims are in good standing until 1966.

## **Clinton Limestone**

Considerable difficulty has been encountered in the production, in sufficient quantities, of an acceptable product for the glass industry. At present, Universal Equipment is testing our material for the purpose of submitting a bid for the construction of a new plant or alterations to our present plant which would enable us to produce sufficient quantities of a suitable product for the glass industry.

On behalf of the Board of Directors,

NEIL H. McDIARMID,  
President.

**IMPERIAL METAL**  
(Non-Personal)

**BALANCE SHEET**

as at August 31, 1968

**ASSETS**

CURRENT:

Cash	\$ 53.66
Accounts receivable	19.45
Prepaid expenses	1,463.49
	<hr/>
	1,536.60
REFUNDABLE DEPOSITS	1,390.50

INVESTMENT IN WHOLLY-OWNED SUBSIDIARIES:

H-G Mining Ltd. (N.P.L.)

shares — at nominal value	1.00
Imperial Solids Pipeline Ltd. (N.P.L.)	
shares — at cost	12.00
	13.00

CAPITAL ASSETS:

Mining properties, claims and options to purchase and/or operate coal properties	1,104,216.00
Building, equipment and siding under construction — Clinton Limestone	62,171.01
	1,166,387.01
EXPLORATION AND DEVELOPMENT COSTS per schedule 1	443,115.61
INCORPORATION EXPENSE	1,443.50
	<hr/>
	\$ 1,613,886.22

NOTES:

(1) The amount shown as due to Shareholders above has since been satisfied by the issuance of common no par value shares at a valuation of 50c per share.

(2) As of the date of this balance sheet, there were four incentive share options outstanding of 25,000 common shares each for a total of 100,000 common shares, at 50c per share. These options are exercisable at various dates, expiring October 1, 1968.

Approved on behalf of the Board

N. H. McDIARMID, Director

E. J. MARTIN, Director

**ND POWER LTD.**

(Liability)

**SHEET**

1, 1964

**LIABILITIES****CURRENT:**

Accounts payable—trade .....	\$ 4,922.24
Land purchase agreement current portion .....	655.00
Accrued wages .....	275.68
	<hr/>
DUE TO SHAREHOLDERS (see Note 1) .....	5,852.92
	206,614.30

**OTHER LIABILITIES:**

Land purchase agreement .....	\$ 1,990.00
Deduct: current portion .....	655.00
	1,335.00

**SHAREHOLDERS' EQUITY****SHARE CAPITAL:**

Authorized 200,000—6% non-cumulative redeemable preference shares of \$10.00 each	
3,000,000—common shares of no par value	
Issued and fully paid (see Note 2)	
1,440,336—common shares of no par value for an amount of .....	1,400,084.00
(including 845,004 shares held in escrow subject to the order of the Superintendent of Brokers)	
	<hr/>
	\$ 1,613,886.22

**AUDITORS' REPORT**

To the Members

We have examined the balance sheet of Imperial Metals and Power Ltd. (N.P.L.) as at August 31, 1964, and the exploration and development costs schedule for the year then ended, and have obtained all the information and explanations we have required. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, the above balance sheet and exploration and development costs schedule are properly drawn up in accordance with generally accepted accounting principles applied on a basis consistent with that of the previous year, so as to exhibit a true and correct view of the state of the affairs of the Company as at August 31, 1964, and the results of its operations for the year then ended, according to the best of our information and the explanations given to us and as shown by the books of the Company.

Vancouver, B.C.

October 20, 1964.

FREDERICK FIELD &amp; CO.,

Chartered Accountants.

**IMPERIAL METALS AND POWER LTD.**  
 (Non-Personal Liability)

**EXPLORATION AND DEVELOPMENT  
 COSTS SCHEDULE**

for the year ended August 31, 1964

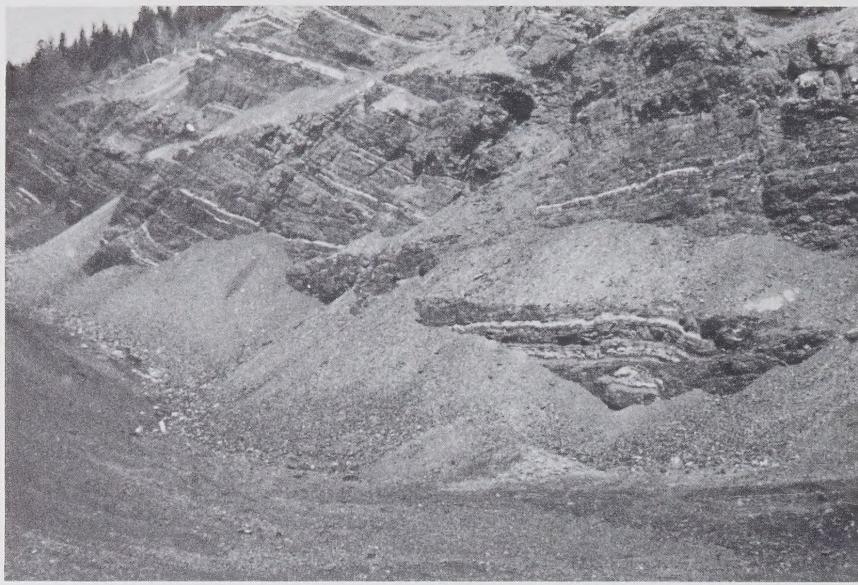
August 31, 1963—TOTAL DEVELOPMENT COSTS ..... \$ 379,225.82

*Add: EXPENDITURES:*

Advertising .....	482.33
Assay and testing .....	645.75
Bagging costs .....	231.28
Engineering salaries, wages and expenses .....	645.49
Engineering consultants .....	4,975.00
Equipment rental .....	376.70
Insurance .....	450.54
Office expense .....	41.86
Open pit stripping .....	2,337.00
Property lease rental .....	327.50
Property registration and filing fees .....	212.50
Road construction and maintenance .....	393.00
Royalty payments .....	1,800.00
Running in costs—limestone .....	11,256.49
Siding rental .....	370.00
Snow ploughing .....	805.00
Staking costs .....	754.10
Sundry .....	731.56
Taxes and licenses .....	4,230.80
Telephone .....	569.34
Truck expense .....	349.35
 Administration	
administration fees .....	9,000.00
audit .....	860.00
employee benefits .....	455.20
equipment storage .....	100.33
free miner's certificate .....	100.00
insurance .....	137.00
legal .....	480.00
management—salaries .....	8,250.00
—travel .....	1,204.76
promotion and advertising .....	1,104.90
shareholders' information and	
reports .....	577.68
share issue and transfer fees .....	467.99
sundry .....	449.22
telephone and telegraph .....	595.20
	<u>23,782.28</u>
Expenses to date—Fiji Fertilizer venture .....	<u>55,767.87</u>
	<u>8,121.92</u>
August 31, 1964—TOTAL DEVELOPMENT COSTS .....	<u>\$ 443,115.61</u>
to balance sheet	



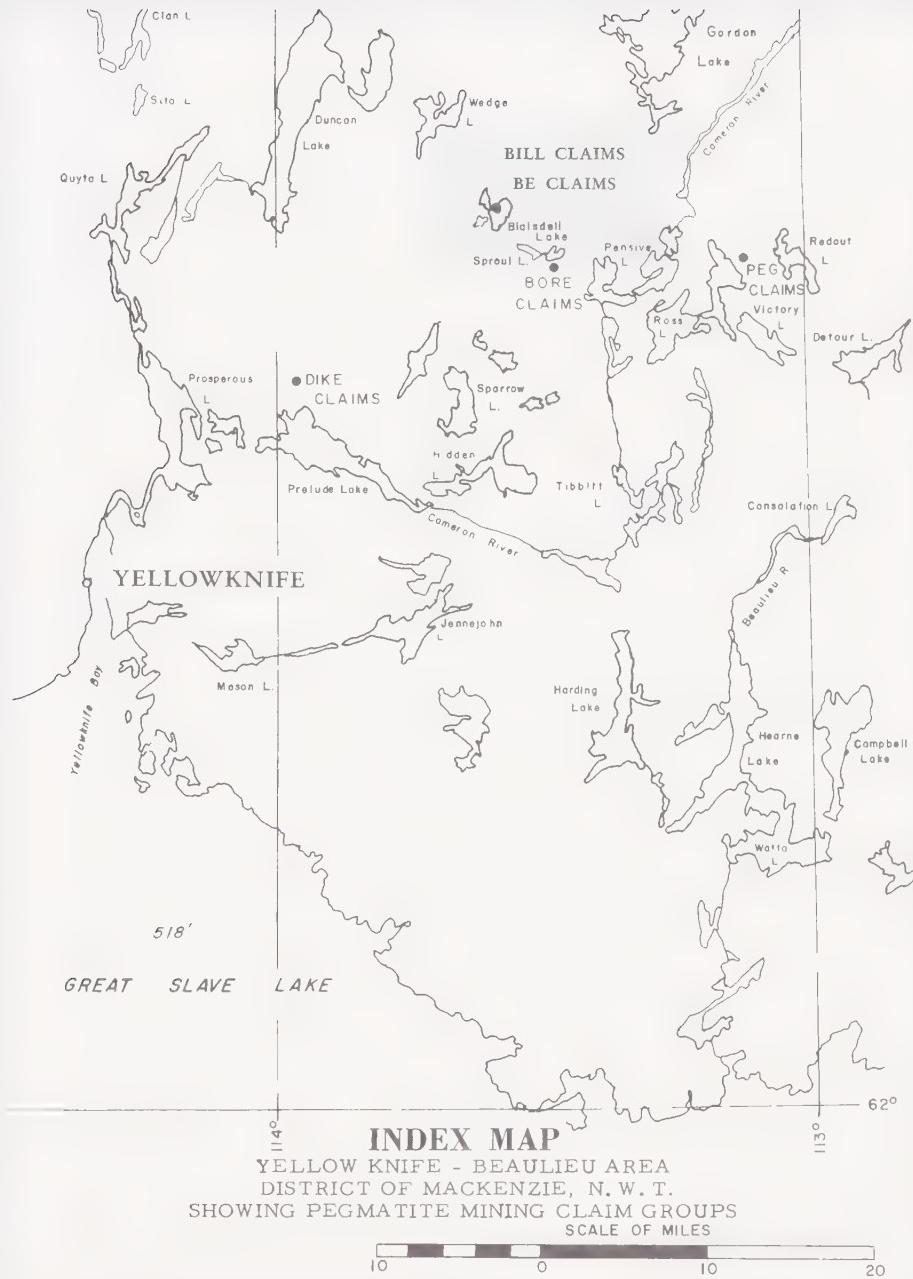
Looking Northeast towards open pit coal field  
from the peak of Lodestone Mountain.



Open pit coal showing small amount of overburden above the bench.



Trenching Northwest of open pit coal area showing the extension  
of the coal available by means of open pit mining.





IMPERIAL METALS AND POWER LTD.  
(NON-PERSONAL LIABILITY)

AR28

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IMPERIAL METALS AND POWER LTD.  
(NON-PERSONAL LIABILITY)  
BRITISH COLUMBIA - CANADA

# PROSPECTUS

JUNE 1966



150,000 Common Shares

IMPERIAL METALS AND POWER LTD.  
(Non-Personal Liability)

Incorporated under the laws  
of British Columbia

The Company is offering for sale, through registered brokers only, 150,000 Common shares of its capital stock at a price of \$1.25 per share, subject to a commission which may be paid or allowed of up to 15¢ per share.

Registered Office

501 Phillips Building  
535 Thurlow Street  
Vancouver, B.C.

Registrar and Transfer Agent

Guaranty Trust Company of Canada  
624 Howe Street  
Vancouver, B.C.

Solicitors

Messrs. Ainsworth, Henson,  
Norby, Purvis & Kendall  
625-925 West Georgia Street  
Vancouver, B.C.

Auditors

Frederick Field & Co.  
Chartered Accountants  
Royal Bank Building  
Vancouver, B.C.

No person is authorized by the Company to give any information or to make any representations other than those contained herein in connection with the issue and sale of the shares referred to herein. Any such information or representation (if given or made by any person) cannot be relied upon as having been authorized by the Company.

A purchase of the securities offered by this Prospectus must be considered a speculation.

No Securities Commission or similar authority in Canada has in any way passed upon the merits of the securities offered hereunder and any representation to the contrary is an offence.

This Prospectus is not, and under no circumstances is it to be construed as, a public offering of the shares for sale in the United States of America, or in any of the territories or possessions thereof.

PURPOSE OF ISSUE

The Company is a mining company holding, within a thirteen mile radius, iron ore, coal and limestone properties near Coalmont, some twelve miles North West of Princeton, British Columbia. To date the Company has established inferred and probable iron ore reserves of 18 million tons, grading 17.68% iron. A magnetometer survey, however, has indicated that the area may contain in excess of 200 million tons. Preliminary exploration of the coal deposits to date has indicated probable reserves of six million tons, but the perimeter of the deposit, which appears to be some 38,000 feet in extent, has yet to be delimited.

In order to determine whether further exploration work to prove up reserves was justified, samples from both the iron and coal deposits have been tested by the Department of Mines and Technical Surveys in Ottawa, by the Britton Research Laboratories in Vancouver and recently at the Lurgi-Chemie works in Frankfurt, Germany. These tests have shown that the iron ore can be concentrated to 68% iron and a pellet produced from the concentrates, using the Coalmont coal, with a total iron content of 90%, which constitutes commercial feed for both blast furnace operations and direct steel processes.

As the next stage, the Company now proposes to undertake the initial phase, by way of trenching and drilling of the iron, coal and limestone deposits, of an exploration program, the object of which is to establish whether there are adequate reserves to justify the major capital investment which would ultimately be required to place the properties in production.

To plan and supervise this exploration work, the Company has retained Wright Engineers Limited, who have recommended an initial program involving an expenditure of \$100,000.00 (see the Report of Kenneth L. McRorie, P. Eng., of Wright Engineers Limited, dated June, 1966, a copy of which accompanies this Prospectus and forms part hereof).

#### STATUTORY INFORMATION

(a) The full name of the Company is Imperial Metals and Power Ltd. (Non-Personal Liability). The head office and registered office of the Company are situate at 501 Phillips Building, 535 Thurlow Street, Vancouver, B.C.

(b) The Company was incorporated under the "Companies Act" of the Province of British Columbia by Certificate of Incorporation dated December 10, 1959.

(c) On April 19, 1966, by Certificate of the Registrar of Companies of the Province of British Columbia, the number of Common shares without nominal or par value which the Company was authorized to issue was increased from 3,000,000 Common shares to 5,000,000 Common shares.

(d) The Directors and Officers of the Company are as follows:

Name and Address	Office Held	Occupation
NEIL HOWARD McDIARMID 6186 Candia Place West Vancouver, B.C.	Director and Chairman of the Board	Barrister and Solicitor
ROBERT CHARLES SPALL 72 Bonnymuir Drive Vancouver, B.C.	Director and President	Metallurgist
JOHN STANLEY ST. MARS 1091 Groveland Road West Vancouver, B.C.	Director	Executive
THOMAS D'ARCY LOARING WHITE 8811 Laurel Street Vancouver, B.C.	Director	Executive
DOUGLAS L. SPRUNG 1068 Eyremont Drive West Vancouver, B.C.	Director	Executive
ALLAN H. AINSWORTH 1205 West 26th Avenue Vancouver, B.C.	Secretary-Treasurer	Barrister and Solicitor

Neil H. McDiarmid may be considered as the promoter of the Company.

(e) The Company's Auditors are Messrs. Frederick Field & Co., Chartered Accountants, Royal Bank Building, Vancouver 2, B.C.

(f) The Registrar and Transfer Agent of the Company is Guaranty Trust Company of Canada, 624 Howe Street, Vancouver, B.C.

(g) The Company is authorized to issue 5,000,000 Common shares without nominal or par value, of which 2,004,830 shares have been issued as fully paid and non-assessable. The authorized capital of the Company is \$2,000,000.00 divided into 200,000 Preferred shares with a nominal or par value of \$10.00 each, of which none have been issued.

(h) No bonds or debentures have been issued by the Company and none are proposed to be issued at this time.

(i) 892,004 Common shares are held in escrow by the said Guaranty Trust Company of Canada, and these shares cannot be sold, assigned or transferred without the prior written consent of the Superintendent of Brokers of the Province of British Columbia.

(j) A total of 815,019 Common shares have been issued for cash, as follows:

<u>Date</u>	<u>Number of Shares</u>	<u>Price</u>	<u>Total</u>	<u>Commission</u>
December 10, 1959	5	\$1.00	\$ 5.00	Nil
January 12, 1961	2,800	\$1.00	\$ 2,800.00	\$ 560.00
January 20, 1961	37,550	\$1.00	\$ 37,550.00	\$ 7,510.00
January 24, 1961	59,650	\$1.00	\$ 59,650.00	\$11,930.00
November 19, 1962	202,520	\$ .90	\$182,268.00	Nil
September 21, 1964	413,228	\$ .50	\$206,614.00	Nil
May 10, 1965	59,266	\$ .50	\$ 29,633.00	Nil
April 20, 1966	40,000	\$ .50	\$ 20,000.00	Nil
	<u>815,019</u>		<u>\$538,520.00</u>	<u>\$20,000.00</u>

No discount has been allowed on the sale of the said 815,019 Common shares.

(k) The Company has not sold any securities other than its Common shares as set out above.

(l) There are no shares issued, or to be issued, or cash paid or to be paid, to any promoter except as follows: 401,400 Common shares issued to Neil H. McDiarmid and 478,600 Common shares to his nominees for a total of 880,000 Common shares for properties as hereinafter set out in paragraph (m) and 303,420 Common shares issued to Neil H. McDiarmid for cash or in consideration of advances made to or on behalf of the Company from time to time.

(m) (i), (ii) and (iii)

A. Iron, Coal and Limestone Properties in the Coalmont - Lodestone Mountain - Princeton Areas

(i) Iron Properties

The Company owns, free and clear of all encumbrances, 80 full-sized recorded mineral claims and three fractional recorded mineral claims situate in the Similkameen Mining Division, Province of British Columbia, as follows:

<u>Name of Claim</u>	<u>Record Number</u>
H-G No. 20 to 35 inclusive	9381 and 9366 to 9380 inclusive
H-G No. 45 to 50 inclusive	9391 to 9396 inclusive
H-G No. 36 to 39 inclusive	10150 to 10153 inclusive
H-G No. 79 and 83 to 86 inclusive	11906 to 11910 inclusive
H.G. No. 80, 87 and 88	12467 to 12469 inclusive
H.G. No. 51 to 56 inclusive	12506 to 12511 inclusive
H.G. No. 65 to 68 inclusive	12514 to 12517 inclusive
H.G. No. 81 and 82	12512 and 12513
Iron No. 1 to 8 inclusive	9109 to 9115 inclusive
Iron No. 17 to 24 inclusive	9201 to 9208 inclusive
Iron No. 33 to 38 inclusive	12733 to 12738 inclusive
C.B. No. 1 Fr., 2 Fr. and 3 Fr.	12470 to 12472 inclusive
C.B. No. 1 to 9 inclusive	12497 to 12505 inclusive

A total of 100 full sized recorded mineral claims situate in the Similkameen Mining Division, Province of British Columbia, have been located by William T. Smith on behalf of the Company, as follows:

<u>Name of Claim</u>	<u>Record Number</u>
B.D. No. 1 to 8 inclusive	15468 to 15475 inclusive
D.B. No. 1 to 48 inclusive	15476 to 15523 inclusive
B.D. No. 9 to 52 inclusive	15794 to 15837 inclusive

All of the foregoing recorded mineral claims have not yet been surveyed and accordingly, their position, size and existence on the ground must be regarded as subject to adjustment on survey.

(ii) Coal Properties

The Company holds nine Coal Licences situate in the Yale Division of Yale District, in the Province of British Columbia, which Licences are more particularly described as follows:

<u>Number</u>	<u>District Lot</u>
145	South 1/2 294
146	North 1/2 293
147	South 1/2 293
154	377
155	East 1/2 285
156	East 1/2 286
157	Commencing at the South West corner of Lot 788; thence due North 1/2 mile; thence due West 1/2 mile; thence due South 1/2 mile; thence due East 1/2 mile to the point of commencement.
158	South 1/2 788
159	Commencing at the South East corner of Lot 788; thence due North for 1/2 mile; thence due East for 1/2 mile; thence due South for 1/2 mile; thence due West for 1/2 mile to the point of commencement.

The H-G Nos. 20 to 50 and Coal Licences 145 to 147 were acquired by the Company from the Company's wholly-owned subsidiary H-G Mining Ltd. (N.P.L.). The Company has purchased all the issued shares of H-G Mining Ltd. (N.P.L.) from A.S. Baillie, Jr., E. Mullin, M.J. Mullin and T.G. Stout in consideration for 100,000 free shares of the Company.

The remaining recorded mineral claims were located by the Company and there are no monies owing against the same. The six Coal Licences were acquired by the Company from the Crown and are held subject only to the payment of the usual annual taxes, rentals and royalties payable to the Crown.

The Company holds, on an option basis, a lease of five Coal Licences situate in the Yale Division of Yale District of the Province of British Columbia, which Licences are more particularly described as follows:

<u>Number</u>	<u>District Lot</u>
69	Lot 297
70	Lot 298
71	East 1/2 of Lot 295
125	Lot 379
126	West 1/2 of Lot 295

The said lease was granted by Mullin's Strip Mines Ltd. under an agreement dated June 8, 1959 to Neil Howard McDiarmid.

Under the terms of the said lease, a sum of \$2,000.00 was paid upon execution thereof and monthly payments of \$150.00 each from July 1, 1959 to date have been paid to Mullin's Strip Mines Ltd. In lieu of the monthly payments of \$150.00 each, the following royalties are payable to the said Mullin's Strip Mines Ltd. in the event that the Licences are placed in production:

- (1) on each of first 500 tons mined in every month the sum of 25¢;
- (2) on each of next 2,500 tons mined in the same month the sum of 20¢;
- (3) on each of next 2,500 tons mined in the same month the sum of 15¢;
- (4) on each ton of coal over 10,000 mined in each month the sum of 10¢.

Provided always that Mullin's Strip Mines Ltd. is entitled to receive by way of the total payments in any year not less than the sum of \$1,800.00. In addition, the Company is required to pay a royalty to the Crown of 25¢ per ton and the usual annual taxes and rentals.

By an agreement dated April 27, 1960, the said Neil Howard McDiarmid assigned his interest in the said lease agreement and all his right, title and interest in and to the five Coal Licences, and

other properties, as herein set out, unto the Company in consideration for 850,000 Common shares of the Company, which shares were lodged in escrow subject to the direction of the Superintendent of Brokers of the Province of British Columbia, and form part of the shares referred to in item (i) hereof.

(iii) Limestone Property

The Company holds a lease from the Crown issued November 6, 1962, for a term of 21 years, of Lot 1186, Kamloops Division of Yale District of the Province of British Columbia, for the purpose of limestone quarrying. A rental of \$80.00 for the first year and \$400.00 per annum for each ensuing five-year period is payable under this lease. In addition, the usual taxes are payable in order to keep the lease in good standing. If the property is placed in production, a royalty is payable yearly, computed at the rate of 10¢ per cubic yard for all limestone material removed during each of the first five years, the rate of such royalty being subject to review and adjustment for each successive five-year period. The lease is presently in good standing and there are no delinquent taxes.

B. Coal Properties - Merritt Area

The Company is the registered and beneficial owner, free and clear of all encumbrances, of all coal, oil, fireclay and all mines and minerals, save gold and silver, in and under the following:

- (i) District Lot 166, Group 1, Kootenay District Yale Division, except that part thereof lying South and East of Right-of-Way shown on Plan A 215 and also except Plans A 215 and 10584;
- (ii) That part of the North 1/2 of Section 4, Township 91, Kootenay District Yale Division, lying South and East of that portion of the North 1/2 shown on Right-of-Way Plan A 215;
- (iii) That part of District Lot 166, Kootenay District Yale Division, lying South and East of that portion of said District Lot shown on Right-of-Way Plan A 215;
- (iv) Lot 1, District Lot 166, Kootenay District Yale Division, Plan 10584.

The said undersurface rights were the subject of an agreement for sale dated March 8, 1960, made between Simon Gerrard, Minnie Victoria Grimshire, William McLean Allan and Alexander McDermid Allan, Executors and beneficiaries of the Estate of Elizabeth Allan, deceased, and Archibald McLean Allan, as beneficiary of the said Estate, of the First Part, and Rodney E. Renshaw, of the Second Part, as assigned by Rodney E. Renshaw to Neil Howard McDiarmid by an agreement dated March 25, 1960. The purchase price, which has been fully paid to the Vendors, was \$30,000.00. In addition, the Company is required to pay a royalty of 5¢ per ton for each ton of coal produced, removed and sold or used by the Company, and any royalties which might be reserved to the Crown. Neil Howard McDiarmid assigned this agreement and all his right, title and interest in and to these properties, and other properties, as herein set out in consideration for 850,000 shares which form part of the shares referred to in item (i) hereof.

There is no plant or equipment on the Merritt coal property.

The Company has carried out some stripping and trenching and a diamond drilling program in this area at an approximate total cost of \$32,000.00, of which approximate sums of \$16,300.00 on diamond drilling, \$8,200.00 on engineering and \$1,200.00 on trenching and stripping were expended.

The Company does not propose to carry out any further work on this property at this time.

C. Limestone Property - Clinton

The Company is the registered and beneficial owner, free and clear of all encumbrances, of Lot A, District Lot 268, Lillooet Plan 4899. This property was acquired in March, 1961, from E. Akhurst Ltd. at a cost of \$4,500.00.

The Company has purchased from the Crown Block A of Lot 7444, Lillooet District, for a total purchase price of \$2,640.00, which has been paid in full.

The following plant and equipment is situate on the Clinton Limestone property:

(i) Plant and Buildings

B.C. Hydro transformer poles  
Electrical wiring  
Aluminum sheeting  
Sundry materials

(ii) Equipment

Raymond bowl mill  
Lipman crusher and trolley  
Three ton elephant chain hoist  
Cyclone classifier  
Esso burner  
Three horsepower motor and gears  
Twenty-five horsepower motor and starter  
Three belt conveyor drive, bucket elevator and drive  
Thirteen and sixteen inch ducts and elbows  
Flash furnace  
Eighty feet transmission belting  
Bowl mill impellor fan  
Screen cloths  
D.D. vibrating screen  
Kason separator and screens  
Roll crusher  
Bearings, grill and steel stock  
Conveyor and supports  
Sundry equipment.

At an aggregate approximate cost of \$96,700.00, the Company has established a plant to quarry, dry, grind and screen the limestone for marketing to glass manufacturers. Approximate sums of \$67,100.00 have been expended on plant and equipment, \$7,700.00 on engineering, \$6,800.00 to establish a siding, and \$2,300.00 on open pit stripping.

The Company does not propose further work on this property at this time.

D. Beryllium Property - Northwest Territories

The Company is the recorded and beneficial owner, free and clear of all encumbrances, of 11 full-sized recorded mineral claims and one fractional recorded mineral claim situate in the MacKenzie District of the Northwest Territories, as follows:

Name of Claim	Number	Expiry Date
BILL Nos. 1 to 4 inclusive	117586 to 117589 inclusive	July 6, 1971
BILL No. 5	N-23545	June 29, 1972
BE Nos. 1 to 6 inclusive	115101 to 115106 inclusive	May 19, 1967
BE Fraction	N-23231	June 5, 1967

The foregoing recorded mineral claims have not yet been surveyed and accordingly, their position, size and existence on the ground must be regarded as subject to adjustment on survey.

The BILL Nos. 1 to 4 inclusive were acquired by the Company from the said Neil Howard McDiarmid by an agreement dated March 14, 1961, in consideration of the allotment and issuance of 10,000 free Common shares of the capital stock of the Company, and 20,000 escrowed Common shares of the capital stock of the Company held subject to the direction of the Superintendent of Brokers of the Province of British Columbia and forming part of the shares referred to in item (i) hereof.

By an agreement dated March 14, 1961, the Company sold the BILL Mineral Claims Nos. 1 to 4 inclusive, to Columbia Explorations Ltd. (Non-Personal Liability) ('Columbia'). Subsequently, by agreement dated September 5, 1961, the Company purchased the BILL Nos. 1 to 5 inclusive and the BE Nos. 1 to 6 inclusive, from Columbia, on the basis of one share of the Company for every

six issued shares of Columbia, for a total of 157,811 free Common shares of the Company. The BE Fraction was located by the Company.

These recorded mineral claims are located on the North shore of Blaisdell Lake approximately 34 miles North East of Yellowknife, N.W.T. Access is by float aircraft during summer and ski-plane during winter. The Gordon Lake winter road lies approximately nine miles North West of the mineral claims.

There is no plant and equipment on the Northwest Territories property.

The Company has expended approximately \$72,000.00 on this property. Of the total expended, approximate sums of \$31,400.00 were expended on engineering reports, \$9,200.00 on diamond drilling, \$8,800.00 on field engineering and \$7,700.00 on trenching. This development program has located approximately 200,000 tons of possible geologically inferred Berylliferous dyke rock, grading 0.35% BeO. It is not proposed to carry out any further work on this property at this time.

E. Gypsum Properties - Merritt Area

The Company is the recorded and beneficial owner, free and clear of all encumbrances, of four recorded mineral claims situate in the Nicola Mining Division of the Province of British Columbia, approximately three miles by tote road off the Kamloops Merritt Highway, as follows:

Name	Record Number
Lookout Nos. 1 to 4 inclusive	15264 to 15267 inclusive

The Company has expended approximately \$45,000.00 on these mineral claims. The total expenditure includes approximate sums of \$12,000.00 on trenching, \$1,000.00 on road building, and \$1,300.00 on engineering.

The foregoing mineral claims have not yet been surveyed and accordingly, their position, size and existence on the ground must be regarded as subject to adjustment on survey.

All of these mineral claims were located by the Company.

There is no plant and equipment on any of these mineral claims.

The Company does not propose to carry out further work on any of these mineral claims at this time.

(m) (iv), (v), (vi), (vii) and (viii)

For particulars with respect to the Company's iron, coal and limestone properties in the Coalmont - Limestone Mountain - Princeton area as to the means of access thereto, the character, extent and condition of underground and surface exploration, development, plant and equipment, the history of the properties and a description of work done and improvements made thereon by the Company, see the report of K.L. McRorie, P. Eng., of Wright Engineers Limited, dated June, 1966, a copy of which accompanies and forms part of this Prospectus.

(n) Other than as set out below, there are no securities of the Company in respect of which option or underwriting agreements have been, or are to be given, by the Company.

The Company offers by this Prospectus, for sale through registered brokers only, 150,000 Common shares at a price of \$1.25 per share, subject to a commission which may be paid or allowed of up to 15¢ per share for each share purchased.

Stock options have been granted by the Company to certain of its Officers and Directors and employees, as follows:

(i) R. Charles Spall, the President and a Director, has been granted an option to purchase up to a total of 25,000 Common shares at 50¢ per share, 10,000 of such shares to be purchased on or before October 1, 1966, and the balance in three blocks of 5,000 shares each, respectively, on or before October 1, 1967, October 1, 1968 and October 1, 1969;

(ii) John Stanley St. Mars, the Past President and a Director, has been granted an option to purchase up to a total of 20,000 Common shares at 50¢ per share, 8,000 of such shares to be purchased on or before January 8, 1967, and the balance in three blocks of 4,000 shares each, respectively, on or before January 8, 1968, January 8, 1969 and January 8, 1970;

(iii) Douglas L. Sprung, a Director, has been granted an option to purchase up to a total of 20,000 Common shares at 66-2/3¢ per share, 10,000 of such shares to be purchased on or before October 1, 1966, and the balance in two blocks of 5,000 shares each, respectively, on or before October 1, 1967 and October 1, 1968;

(iv) T.D.L. White, a Director has been granted an option to purchase up to a total of 2,000 Common shares at 66-2/3¢ per share in two instalments of 1,000 shares each, exercisable on or before October 1, 1966 and October 1, 1967, respectively;

(v) William T. Smith, the Company's Field Superintendent, has been granted an option to purchase up to a total of 1,000 Common shares at 66-2/3¢ per share in two instalments of 500 shares each, exercisable on or before October 1, 1966 and October 1, 1967, respectively.

(o) The Company proposes to expend such monies as are necessary to carry out the recommendations contained in the Report of Kenneth L. McRorie, P. Eng., of Wright Engineers Limited, dated June, 1966, as follows:

"It is recommended that:

1. A drilling programme be undertaken to prove the existence of sufficient reserves of coal and iron ore to justify large scale operations for the production of sponge iron.
2. Additional studies be carried out to determine the potential market for the product.
3. A detailed engineering study be undertaken to confirm the preliminary operating cost estimates and determine the profitability of the enterprise.

#### "DRILLING PROGRAMME

The purpose of the proposed programme is to endeavour to outline a minimum of 200,000,000 tons of iron ore and to determine the potential open pit reserves available in the Tulameen Coalfield.

It is recommended that a total of 12,000 feet of drilling be done over the grid outlined by the magnetometric survey. These holes should be drilled on a pattern at 400 foot centres on lines spaced 800 feet apart.

A strike length of 28,000 feet is reasonably assured along the coal outcrop. In order to check the percentage of coal available in the measures and to assess the probable stripping ratio in open pit mining, the following work is recommended.

- (a) Cut 20 trenches across the outcrop and sample the coal exposed.
- (b) Drill 20 holes in the down dip side of these trenches to test the dip and continuity of the bed to a depth of 200 feet.

#### "COST ESTIMATE

The estimated cost of the initial drilling programme outlined above is as follows:-

##### Coal

20 Trenches by dozer - 20 days at \$200	\$ 4,000
20 holes - 200 feet deep - 4,000 feet @ \$3.00	12,000

##### Iron Ore

60 holes 200 feet deep - 12,000 feet @ \$4.50	54,000
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##### Miscellaneous

Road Improvement	5,000
Surveys	3,000
Sampling	2,000
Analysis and Testing	6,000
Supervision	2,500
Evaluation Report	2,500
	<hr/>
Contingency	91,000
	<hr/>
	9,000
	<hr/>
	\$100,000"

The Company considers that the proceeds of the offering will be sufficient to carry out the recommendations set out above, to pay current accounts and defray normal business and administrative expenses and legal and accounting services with respect to the operations of the Company.

No part of the proceeds shall be used to invest, underwrite, or trade in securities other than those that qualify as investments in which Trust Funds may be invested under the laws of the jurisdictions in which the securities offered by this Prospectus may lawfully be sold.

Should the registrant propose to use the proceeds to acquire non-trustee type securities after the initial distribution of the securities offered by this Prospectus, approval by the shareholders must be obtained and disclosure made to the regulatory securities bodies having jurisdiction over the sale of the securities offered by this Prospectus.

(p) The Company has been incorporated for more than one year, and all expenses incurred in the formation, incorporation and preliminary matters related thereto have been paid.

(q) No indebtedness is intended to be created or assumed that is not disclosed herein or shown on the Balance Sheet of the Company made up to April 30, 1966, a copy of which accompanies and forms part of this Prospectus.

(r) The following is a summary of the business record of each of the Directors of the Company during the past three years:

NEIL HOWARD McDIARMID,

Barrister and Solicitor, Director of Craigmont Mines Limited; Chairman of the Board of Imperial Metals and Power Ltd. (N.P.L.), Peel Resources Limited (N.P.L.) and Polaris Mines Limited (N.P.L.).

ROBERT CHARLES SPALL

President and Director of Imperial Metals and Power Ltd. (N.P.L.); Director of Peel Resources Limited (N.P.L.) and Polaris Mines Limited N.P.L.).

JOHN STANLEY ST. MARS

President and Director of Filko Ignition Co. of Canada Ltd.; Past President and Director of Imperial Metals and Power Ltd. (N.P.L.).

THOMAS D'ARCY LOARING WHITE

Armco Drainage & Metal Products of Canada Ltd.; Director of Imperial Metals and Power (N.P.L.).

DOUGLAS L. SPRUNG

Works Manager of Canadian Western Pipemills Ltd.; President of Sprung Mobile Pipe Corporation Ltd.; Director of Imperial Metals and Power Ltd. (N.P.L.).

(s) The only interest, direct or indirect, of any of the Directors or Officers of the Company in any of the properties acquired by the Company is as set forth in paragraph (m) hereof.

(t) None of the Directors of the Company has received any remuneration as a Director during the past fiscal year of the Company, but Robert Charles Spall, as the Vice-President of the Company, has received a total salary of \$9,000.00 during the past fiscal year.

(u) (i) No decision as to the payment of remuneration to Directors has been made by the Company, and therefore no estimate of the same can be made.

(ii) Robert Charles Spall, as the President of the Company, will receive a total salary of \$12,000.00 payable monthly during the current fiscal year of the Company, and Neil H. McDiarmid, as the Chairman of the Board, a total salary of \$9,000.00 payable monthly.

(v) There are no persons who, by reason of beneficial ownership of shares of the Company, or by reason of any written agreement, are able or entitled to elect or cause to be elected a majority of the Directors of the Company, other than the present Directors by virtue of their own holdings, together with such proxies as they may be able to obtain by the solicitation of the general body of shareholders.

- (w) No dividends have been paid by the Company.
- (x) There are no material facts not disclosed in this Prospectus.
- (y) The foregoing constitutes full, true, and plain disclosure of all material facts in respect of the offering of the securities referred to above, as required by the "Securities Act" of the Province of British Columbia, and there is no further material information applicable other than in the financial statements or reports where required.

VANCOUVER, BRITISH COLUMBIA  
June 16th, 1966

NEIL HOWARD McDIARMID  
Director and Promoter  
"N.H. McDIARMID"

JOHN STANLEY ST. MARS  
Director  
"JACK ST. MARS"

ROBERT CHARLES SPALL  
Director  
" ROBT. C. SPALL"

THOMAS D'ARCY LOARING WHITE  
Director  
"T.D.L. WHITE"

DOUGLAS L. SPRUNG  
Director  
"DOUGLAS L. SPRUNG"

IMPERIAL METALS AND POWER LTD.  
(Non-Personal Liability)

FINANCIAL STATEMENTS AS AT APRIL 30, 1966

BALANCE SHEET

ASSETS

CURRENT:

Cash	\$ 2,290.39
Prepaid expenses	523.33
	<hr/>
	2,813.72

REFUNDABLE DEPOSITS

INVESTMENTS IN WHOLLY OWNED SUBSIDIARIES (see Note 1):

H-G Mining Ltd. (N.P.L.)		
shares at nominal value	1.00	
Imperial Solids Pipeline Ltd. (N.P.L.)		
shares - at cost	<hr/> 12.00	13.00

CAPITAL ASSETS - at cost:

Mining properties, claims and options to purchase and/or operate coal properties	1,104,216.00	
Building, equipment and siding Clinton Limestone (see Note 2)	<hr/> 62,179.62	1,166,395.62

EXPLORATION AND DEVELOPMENT COSTS - per Schedule 1

<u>INCORPORATION EXPENSE</u>	<hr/> 1,950.50	
<hr/> \$ 1,721,698.65		

LIABILITIES

CURRENT:

Bank loan	10,000.00	
Accounts payable (see Note 3)	<hr/> 16,083.15	
<hr/> 26,083.15		

DUE TO SHAREHOLDERS

SHAREHOLDERS' EQUITY

SHARE CAPITAL:

Authorized			
200,000 - 6% non-cumulative redeemable preference shares of \$10.00 each			
5,000,000 - common shares of no par value (see Note 4)			
Issued and fully paid (see Note 5)	Shares		
August 31, 1965 - common shares	1,912,830	1,636,331.00	
Add: Issued during the period (see Note 6)	<hr/> 92,000	<hr/> 46,220.00	
April 30, 1966 - common shares	<hr/> 2,004,830		1,682,551.00
(Including 892,004 shares held in escrow subject to the order of the Superintendent of Brokers)			

NOTE: The accompanying notes form an integral part of these statements.

TO THE MEMBERS:

We have examined the above Balance Sheet of Imperial Metals and Power Ltd. (Non-Personal Liability), as at April 30, 1966, and the Exploration and Development Costs Schedule for the eight months then ended, and have obtained all the information and explanations we have required. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, the above Balance Sheet and Exploration and Development Costs Schedule are properly drawn up in accordance with generally accepted accounting principles applied on a basis consistent with that of the previous period, so as to exhibit a true and correct view of the state of the affairs of the company as at April 30, 1966, and the results of its operations for the period then ended, according to the best of our information and the explanations given to us and as shown by the books of the company.

"FREDERICK FIELD & CO."  
Chartered Accountants

Vancouver, B.C.  
June 2, 1966.

Approved on behalf of the Board

"N. H. McDIARMID" Director  
"T. D. L. WHITE" Director

NOTES TO THE BALANCE SHEET AS AT APRIL 30, 1966

- NOTE 1: The wholly owned subsidiary companies remained inactive during the period.
- NOTE 2: Negotiations will be entered into for the reactivation of the Clinton Limestone Plant. However, your company does not propose to expend further monies on this property.
- NOTE 3: The costs of final process testing which commenced in the latter part of April, 1966 are expected to amount to approximately \$15,000.00.
- NOTE 4: During the period the authorized common share capital was increased from 3,000,000 common shares of no par value to 5,000,000 common shares of no par value. Approval for this increase had been given at the 1964 annual general meeting.
- NOTE 5: As at the date of this Balance Sheet there were two incentive share options outstanding for a total of 45,000 common shares at 50¢ per share, and three options for a total of 23,000 common shares at 66-2/3¢ per share. These options are exercisable at various dates commencing October 1, 1966.
- NOTE 6: Details of shares issued during the period:  
2,000 common shares at 61¢ in satisfaction of an account payable.  
40,000 common shares at 50¢ to a director in partial satisfaction of cash advances.  
50,000 common shares at 50¢ to White, Weld & Co. of New York in consideration of services rendered as financial consultants.

IMPERIAL METALS AND POWER LTD.  
(Non-Personal Liability)

EXPLORATION AND DEVELOPMENT COSTS SCHEDULE  
FOR THE EIGHT MONTHS ENDED APRIL 30, 1966

August 31, 1965 - TOTAL DEVELOPMENT COSTS \$ 489,664.37

Add: EXPENDITURES:

Exploration and development	
Bulldozing and trenching	350.75
Consulting engineers	1,776.51
Engineering salaries and wages	662.38
Equipment rental	105.00
Insurance	459.13
Power	206.00
Process testing	3,284.47
Property lease rental	80.00
Property registration and filing fees	586.50
Royalty payments	1,200.00
Siding rental	370.00
Sundry expenses	94.33
Taxes and licenses	1,183.72
Truck expense	150.67
Watchman	800.00
	<hr/>
	11,309.46
Deduct: Costs recovered - Limestone project	<u>2,804.62</u>
	<hr/>
	8,504.84

Administration

Administration - fees	6,203.00
- travel	108.25
Audit	700.00
Employee benefits	260.65
Insurance	132.78
Legal	3,102.04
Management - salaries	4,875.00
- travel	2,391.00
Promotion and public relations	5,616.04
Shareholders' information and reports	495.76
Share issue and transfer fees	522.05
Sundry	531.71
Telephone and telegraph	627.82
	<hr/>
	25,566.10

Add: Financial consultants' services

25,000.00	<hr/>
50,566.10	<hr/>

59,070.94

April 30, 1966 - TOTAL DEVELOPMENT COSTS - to Balance Sheet

\$ 548,735.31

REPORT ON THE PROPERTIES OF  
IMPERIAL METALS AND POWER LTD (N.P.L.) AT COALMONT, B.C.

Wright Engineers Limited  
Vancouver, B.C.

June, 1966

INTRODUCTION

This report is an appraisal of the properties held by Imperial Metals and Power Ltd. (N.P.L.) in the Coalmont area of British Columbia. The properties consist of (a) 180 mining claims situated on the LodeStone Mountain Plateau, some 7 miles southwest of Coalmont, (b) extensive coal beds known as Tulameen Coalfield immediately west of Coalmont and (c) a deposit of limestone within 13 miles of the area. No underground or surface plant and equipment are presently in place on these properties. The report is based on a review of geological reports on the specific areas concerned, a study of drilling information and exploratory work completed to date and metallurgical test work carried out in connection with concentration of the magnetite as outlined in the bibliography. The proposed process and its advantages have been studied in some detail as well as correspondence and other memoranda relative to potential markets.

The writer visited the property May 17th and 18th, 1966, at which time a detailed examination of the coalfield was made. Snow conditions prevented examination of the LodeStone mining claims. The limestone deposit was not examined.

GENERAL SUMMARY

The Company has potential reserves of coal, iron ore, and limestone. These properties when assessed individually are not economically important at this time. The important feature of these holdings are the proximity of the coal and iron ore. The transportation cost involved in bringing coal and iron ore together to make metallic iron is of fundamental importance in the steel industry. At Coalmont the cost of transporting the coal is entirely eliminated and only the final product need be transported to market. The combination of these minerals to produce a product which consists of 90% metallic iron warrants further economic consideration.

CONCLUSIONS

Imperial Metals and Power Ltd. (N.P.L.) has holdings which, on preliminary examination, warrant further investigation. These holdings are:

- (1) Outright ownership of certain Crown Grants and control of others which contain the Tulameen Coalfield. Substantial reserves of high volatile bituminous coal are indicated.
- (2) Outright ownership of certain mineral claims on LodeStone Mountain on which a limited amount of drilling has indicated probable reserves of 18,000,000 tons of ore grading 17.68% Fe. A magnetometric survey covering over 600 acres however, had indicated magnetic intensities greater than normal and from which a major tonnage of ore may be inferred.
- (3) Outright ownership of a lease on which limestone is known to occur and hand sampling has indicated a good grade of commercial limestone.

A process is available by which the iron ore, coal and limestone can be combined to form a product of enhanced value.

Preliminary estimates indicate that a profitable operation would result by integrating the resources available at Coalmont.

It is reasonable to expect that a market for 1,000,000 tons per annum of sponge iron can be developed.

RECOMMENDATIONS

It is recommended that:

- (1) A drilling programme be undertaken to prove the existence of sufficient reserves of coal and iron ore to justify large scale operations for the production of sponge iron.

- (2) Additional studies be carried out to determine the potential market for the product.
- (3) A detailed engineering study be undertaken to confirm the preliminary operating cost estimates and determine the profitability of the enterprise.

#### DRILLING PROGRAMME

The purpose of the proposed programme is to endeavour to outline a minimum of 200,000,000 tons of iron ore and to determine the potential open pit reserves available in the Tulameen Coalfield.

It is recommended that a total of 12,000 feet of drilling be done over the grid outlined by the magnetometric survey. These holes should be drilled on a pattern at 400 foot centres on lines spaced 800 feet apart.

A strike length of 28,000 feet is reasonably assured along the coal outcrop. In order to check the percentage of coal available in the measures and to assess the probable stripping ratio in open pit mining, the following work is recommended.

- (a) Cut 20 trenches across the outcrop and sample the coal exposed.
- (b) Drill 20 holes on the down dip side of these trenches to test the dip and continuity of the bed to a depth of 200 feet.

#### COST ESTIMATE

The estimated cost of the initial drilling programme outlined above is as follows:-

##### Coal

20 Trenches by dozer - 20 days at \$200	\$ 4,000
20 holes - 200 feet deep - 4,000 feet @ \$3.00	12,000

##### Iron Ore

60 holes 200 feet deep - 12,000 feet @ \$4.50	54,000
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##### Miscellaneous

Road improvement	5,000
Surveys	3,000
Sampling	2,000
Analysis and Testing	6,000
Supervision	2,500
Evaluation Report	2,500
	<hr/>
	91,000
Contingency	9,000
	<hr/>
	\$100,000

#### LOCATION AND ACCESS

Coalmont is located in the southern interior dry belt of B.C. on the Canadian Pacific Railway some 240 miles from the deep sea port of New Westminster. An all-weather road connects with the southern link of the Trans-Canada Highway at Princeton. Good logging roads parallel the south boundary and the greater part of the western outcrop of the coalfield and continue to within 2-1/2 miles of the top of Lodestone Mountain. A jeep road continues from the logging road and serves as access for exploration of the iron ore deposit. Numerous trails are available for exploring the coalfield. The limestone deposit is situated within 6 miles of the village of Princeton and is accessible by a short trail from the highway.

The area is generally covered with glacial drift but outcrops are exposed, particularly along the crest of Lodestone Mountain and the southern part of the coalfield. The lower slopes are moderately timbered but the higher areas are alpine in nature.

## LODESTONE MOUNTAIN - IRON DEPOSITS

### History

The presence of magnetite on Lodestone Mountain has been known for about sixty years. The ground has been staked many times and many trenches are evident. In 1954-55 the United States Steel Corporation conducted a dip-needle survey and carried out an exploration drilling and trenching programme. During the summer of 1962 Imperial Metals and Power Ltd. (N.P.L.) carried out a programme of trenching and drilled 12 diamond drill holes for a total of 2279 ft. and subsequently conducted a magnetometric survey over a grid measuring 8,800 feet long and 3,400 feet wide. Approximately 50% of the area within the grid exhibits magnetic intensity ranging from 20,000 gamma to 55,000 gamma. Magnetic intensity of 20,000 gamma appears to co-relate with 15% Fe assuming no overburden.

### Claims

The Company holds 180 mineral claims situated in the vicinity of Lodestone Mountain and are more particularly described below:

<u>Mineral Claim</u>	<u>Record Number</u>
B.D. 1-8	15468 - 15475 inclusive
D.B. 1-48	15476 - 15523 inclusive
B.D. 9-52	15794 - 15837 inclusive
H-G 20-35	9366 - 9381 inclusive
H-G 45-50	9391 - 9396 inclusive
H-G 36-39	10150 - 10153 inclusive
H-G 79	11906
H-G 83-86	11907 - 11910 inclusive
Iron No. 1 - No. 8	9109 - 9116 inclusive
Iron No. 17 - No. 24	9201 - 9208 inclusive
Iron No. 33 - No. 38	12100 - 12105 inclusive
C.B. No. 1 - No. 3 Fractions	12470 - 12472 inclusive
H-G 80	12467
H-G 87-88	12468 - 12469
H-G 51-56	12506 - 12511 inclusive
H-G 65-68	12514 - 12517 inclusive
H-G 81-82	12512 - 12513
C.B. No. 1 - No. 9	12497 - 12505 inclusive

### Geology

Magnetite has been known to be concentrated in a large stock of pyroxene which intrudes the Nicola series present in the Princeton - Tulameen area. The stock trends northeasterly for 11 miles from Granite Creek to the south slope of Grasshopper Mountain. The width varies from about 1-1/2 miles at Granite Creek to 4 miles through Lodestone Mountain and 2 miles at Grasshopper Mountain. The stock underlies the high ridge comprising Lodestone Mountain, Olivine Mountain, Tanglewood Hill and the northern slope of Grasshopper Mountain, and rises to an elevation of 6,218 feet at Lodestone Mountain. The rocks are exposed to an elevation of 2,800 feet near the northern extremity, by the Tulameen River basin.

The regional geology has been mapped by Camsell (1907-1910), Rice (1939-1944) and more recently by Eastwood (1959). In the vicinity of Lodestone Mountain the pyroxenite extends over a width of 1-1/2 miles where it is cut by a body of peridotite and dunite. To the northeast a series of pyroxene syenite rocks extends over a width of 1-1/2 miles where true pyroxenite again outcrops on Tanglewood Hill. The bulk of the magnetite is found in the Pyroxenite.

Most of the magnetite is disseminated throughout the pyroxenite but small lenses of massive magnetite occur, notably on Tanglewood Hill. In this area the lenses of massive magnetite vary in width from a few inches to 18 feet.

The general area of Lodestone Mountain was sampled by Eastwood and reported in the annual report of the B.C. Department of Mines dated 1959. The arithmetic average of nine groups of samples reported is 17.77% Fe. Twelve holes drilled by Imperial Metals and Power Ltd. (N.P.L.) indicated possible reserves of 18,110,000 tons of ore grading 17.68% Fe.

## THE TULAMEEN COALFIELD

### History

The history of the Tulameen Coalfield has been described in some detail by H.M. Rice and W.S. Shaw in the reports of the Geological Survey of Canada dated 1947 and 1952 respectively.

Coal was found about the turn of the century where it was exposed by the deep cleft known as Collins Gulch and later along the southwest boundary where it was exposed by the north branch of Granite Creek. The Columbia Coke and Coal Company, succeeded later by the Coalmont Collieries, was organized to exploit the coal measures. An intensive exploration programme was begun to develop the coal and considerable drifting and drilling was done along the northeast boundary between Collins Gulch and Fraser Gulch, a distance of some 6,000 feet. Unfortunately the coal was found to be badly crushed and unsuitable for the markets of the day. The development of the exposures along the Granite Creek proved successful and during the years 1919 - 1940, a total of 2,364,000 tons of coal was mined. Mining was confined to a seam some 7 - 12 feet wide, although some sporadic attempts were made to mine other seams within the measures. Excessive pressures limited the workings down the dip to a distance of about 2,500 feet.

Near the southeastern extremity of the coalfield, underground exploration and surface trenching, locally known as the Hays-Vittoni prospects, was successful in locating the outcrop. The coal beds were found to be turned up sharply and badly mixed with shale. It was not confirmed if this outcrop represented the main coal beds or if it was one of the lesser beds known to exist within the coal measures.

In 1954 the Mullin's Strip Mines Ltd. developed an open pit in the surface pillar adjacent to the old No. 3 Mine. A total of 238,000 tons of coal was mined and delivered to the Granby Mining Co. at Princeton. In addition, the Company carried out surface exploration by way of a series of trenches which confirmed the outcrop from Collins Gulch to Fraser Gulch, a distance of some 6,000 feet.

Subsequently Imperial Metals and Power Ltd. (N.P.L.) carried out an exploration programme by which a series of trenches at approximately 500 foot centres outlined the outcrop for a further 7,500 feet northwest of the old No. 5 Mine.

The trenching carried out by the Mullin's Strip Mines Ltd. and latterly by Imperial Metals and Power Ltd. (N.P.L.) exposed coal and mixed beds of coal and shale over widths of up to 120 feet. The observed dips vary between 35° and 60° but a coal bed 70 feet thick is indicated.

### Coal Licenses

Imperial Metals and Power Ltd. (N.P.L.) hold or control coal licenses which encompass the area known as The Tulameen Coalfield. Of the total area of 5,440 acres containing the coal measures, the Company directly controls 2,880 acres held under lease from the Provincial Government of British Columbia. The remaining 2,560 acres is held under lease by Mullin's Strip Mines Ltd. of Princeton, which has assigned its rights to Imperial Metals and Power Ltd. (N.P.L.) in consideration of payment by royalty on a graduated basis. The royalty payable on the anticipated consumption of coal is approximately 12.5 cents per ton.

The coal leases held by the Company are:

No. 145	S 1/2 Lot 294	320 acres
No. 146	N 1/2 Lot 293	320 acres
No. 147	S 1/2 Lot 293	320 acres
No. 154	District Lot 377	640 acres
No. 155	E 1/2 Lot 285	320 acres
No. 156	E 1/2 Lot 286	320 acres
No. 157	Unsurveyed	160 acres
No. 158	S 1/2 Lot 788	320 acres
No. 159	Unsurveyed	160 acres

The coal leases held under option from Mullins Strip Mines Ltd. are:

No. 69	District Lot 297	640 acres
No. 70	District Lot 298	640 acres
No. 71	E 1/2 D.L. 295	320 acres
No. 125	District Lot 379	640 acres
No. 126	W 1/2 D.L. 295	320 acres

### Geology

The coal-bearing formation is found in a thick series of sedimentary rocks both overlain and underlain by volcanics. These series rest unconformably on a basement of metamorphosed rocks known as the Nicola group. The deep cleft on the northern boundary called Collins Gulch has exposed about 2,500 feet of these sediments which can be roughly divided stratigraphically into three groups, the lower 600 feet composed of sandstones interbedded with shales, the middle group consisting of 460 feet of fissile shales which contain the principal coal seams and the upper 1,400 feet of sandstone with some thin shale bands and conglomerate. The overlying sheet of basaltic rocks generally cover the southeast half of the coal bed and it was under this sheet that the operations of the Coalmont Collieries were carried on for some 20 years.

The coal bearing measures exhibit a synclinal structure and occupy a northwesterly trending ovoid shaped basin with its long axis extending over a length of 3 miles and its short axis averaging about 1-1/2 miles in width.

The coal beds consist of seams of relatively clean coal 6 to 12 feet thick intercalated with seams of mixed coal and shale. The beds in the southwestern limb dip gently at 20° to 35°, whereas those on the northeastern boundary dip steeply at 40 to 65 degrees. A major fault with a vertical displacement of 500 feet is known to exist between the old No. 3 and No. 4 workings. A lesser fault with a vertical displacement of 150 feet separated the No. 4 and No. 5 Mines. No visible evidence of these faults can be detected on the opposite side of the syncline.

The coal is a high volatile bituminous (Rank C). The thermal content of the clean coal mined by the Coalmont Collieries is reported to have been 11,800 B.T.U. per pound. The coal as mined by the Mullin's Strip Mines Ltd. averaged about 9,000 B.T.U. per pound. More recent tests conducted on behalf of Imperial Metals and Power Ltd. (N.P.L.) gave values of 10,100 B.T.U. per pound.

The general evidence as interpreted from reports and visual inspection suggests that a bed of coal and mixed coal about 70 feet thick will be proven over a length of 28,000 feet. It is believed that the use of modern coal cleaning equipment will result in a yield of about 60% coal.

### LIMESTONE

The Company holds a readily accessible limestone deposit within six miles of the village of Princeton. No drilling has been done to date to prove this deposit, but surface sampling has indicated a high quality deposit suitable for the needs of the operation. Various samples taken from the deposit, analyzed from 90% - 97% calcium carbonate. The requirements for limestone are of the order of 50,000 tons per year.

The deposit is situated about 2,000 feet from the local highway and jeep trail serves as access to the property.

### Lease for Limestone Quarrying

The property is held under Lease No. 6341 District Lot 1186, in the Kamloops Division, Yale District.

### PROCESS STUDIES

Tests conducted at the instigation of Imperial Metal and Power Ltd. (N.P.L.) by the Department of Mines and Technical Surveys on samples of ore taken from Lodestone Mountain, have demonstrated that a high grade concentrate can be produced by magnetic concentration. Ore ground to - 150 mesh produced a concentrate assaying 66.54% Fe. Additional work carried out by the Britton Research Laboratories, Vancouver, B.C. has confirmed these results.

Among the many direct reduction processes developed during recent years, the process developed by the Steel Company of Canada and Lurgi-Chemi of Frankfurt, Germany, is now being used successfully to produce sponge iron in commercial quantities. Samples of iron ore from Lodestone Mountain and coal from the Tulameen Coalfield have been shipped to Germany for testing and found suitable for the process. The sponge iron resulting from these tests had the following analysis:

Total Fe	89.3% - 90.2%	Cr.	0.08
Metallic Fe	86.0 - 89.0	S.	0.03 - .015
P.	0.05	Cu	0.02
SiO <sub>3</sub>	2.33	Pb	0.01
Al <sub>2</sub> O <sub>3</sub>	2.10	Zn	0.07
CaO	1.90	As	0.01
MgO	1.10	Na <sub>2</sub> O )	
Ti	1.44 - 1.55	K <sub>2</sub> O )	0.10
Mn	0.23	C	0.66 - 0.30

The deleterious impurities present are well within the limits acceptable by the steel industry with the possible exception of titanium, which, in any event, will migrate to the slag in conventional converters, electric furnaces and open hearth operations. Ores containing a titanium content up to 3% are being used successfully in Japan.

The Stelco-Lurgi process, or more commonly known as the SL/RN process is the result of research work done over the years by Steel Company of Canada, Lurgi-Chemi of Frankfurt, Germany, Republic Steel Corporation of Cleveland, Ohio and the National Lead Company, New York. High purity sponge iron is produced by reducing iron ores with coal and limestone in a gas fired rotary kiln. The resulting product, sponge iron, so named because of its porosity, can be used in all ironmaking and steelmaking processes in the form of pellets, fines and briquettes.

A plant capable of producing 100 tons of sponge iron per day is operating at Hamilton, Ontario and a similar plant is in use at Spaulding, Alabama. A plant designed to produce 700 tons per day is being built in South Korea. The basic steel industry in Mexico depends on the production of sponge iron to charge the electric furnaces.

The SL/RN process can reduce iron ores of both low and high purity in a wide range of particle sizes. However, the efficiency of the operation is greatly increased by the use of uniformly sized and high purity feed. The ideal feed as a result of much experimentation and research, has been found to be (green) unfired pellets, containing over 60% Fe and sized to about 1/4 inch in diameter. The coal is usually sized to about 1/8 inch and the flux in the form of limestone or dolomite is sized to about 1/32 inch. The smaller sized ingredients of the charge thus tend to fill the voids and come into intimate contact with the larger pellets as they travel slowly down the length of the kiln.

The charge consisting of green pellets, coal and flux, is fed continuously into the kiln and due to the slope and rotation, move through the kiln to the discharge point. The reduction of the magnetite (or hematite) is accomplished by the combustion of coal and the breakdown of natural gas in the presence of the controlled introduction of air into carbon monoxide and hydrogen. These gases in association with oxygen rich (Fe<sub>3</sub>O<sub>4</sub>) feed reduce the ore to metallic iron. During the process, CO<sub>2</sub> and water are formed which are exhausted. A total metallization of 95% of the available iron is usually obtained.

The flux is introduced to reduce the sulphur content usually present in ores and coal. The close association of the flux in the presence of a reducing atmosphere forms stable compounds with sulphur which can be magnetically separated from the metallic iron after discharge.

Extensive tests have shown that it is feasible to use sponge iron in all standard ironmaking and steelmaking processes. In tests conducted by the U.S. Bureau of Mines in a small experimental blast furnace, substantial improvement in productivity was achieved when prereduced burdens were

used. In one test using 85% SL/RN pellets as a substitute for raw ore in the charge, the output of the furnace was increased by 75% with a reduction of 45% in coke consumption.

In tests conducted in electric furnaces using sponge iron as a partial substitute for scrap, the production rate was enhanced materially. The addition of 30% sponge iron in the melt resulted in an increase of 25% in productivity with a reduction of 15% power consumed.

The potential markets for sponge iron is as a partial burden for blast furnace operations and as a substitute for scrap iron in conventional converters, electric furnaces and open hearth operations. The price of scrap fluctuates rather wildly and the quality tends to deteriorate due to the addition of undesirable elements, which cause serious control problems in casting and rolling. The use of sponge iron provides the user with a guaranteed source of raw materials at a known chemical content and price.

#### POTENTIAL MARKETS

Preliminary discussions with a number of major Japanese steel producers have indicated considerable interest in the purchase of sponge iron. These companies are concerned about the high cost of coking coal and have been studying the possibility of using pre-reduced pellets (sponge) as a partial charge in blast furnace operations, as well as a possible substitute for scrap in conventional steel making processes. Negotiations are underway to import 250,000 metric tons of sponge iron from Venezuela.

The total scrap consumption in Japan is of the order of 22,600,000 metric tons annually of which 3,870,000 metric tons are imported. In addition, about 1,900,000 metric tons of pig iron and 36 million metric tons of iron ore are also imported.

The discussions to date have been exploratory, however it is believed that a market for 1,000,000 metric tons of pre-reduced pellets (sponge) exists and this market should be an expanding one. Other potential markets are the consumers of scrap iron along the Western seaboard of Canada and United States. These markets have not been investigated in detail, however some interest has been indicated. There would not appear to be a major single market for the produce on the coast but the total market represented by individual consumers may be significant.

#### PRODUCT VALUE

Sponge iron is a relatively new product and as such has not established a price on the world market. There are certain advantages in the use of sponge iron relative to scrap iron which suggests it may command a premium. Until a price is established, it would seem appropriate to consider that it will compete with No. 1 heavy scrap on the market.

The price of No. 1 scrap in the Japanese market is \$45.00 to \$48.00 per metric ton. This converts to approximately \$32.00 (Can.) per short ton, after all freight and other charges are paid. The average price for scrap over a 10-year period is of the order of \$29.00 (U.S.). The price fluctuates considerably but a projected price of \$30.00 per short ton of sponge iron would appear to be a reasonable expectation.

#### INFERRRED ORE RESERVES

##### Iron

The potential tonnage of low grade ore on Lodestone can only be inferred. The area of the magnetometric grid which exceeds 20,000 gamma, is 14,800,000 square feet. An open pit taken to an average depth of 200 feet would provide a total of about 275,000,000 tons of ore. The grade indicated by the limited amount of drilling completed to date is 17.68 Fe, but it remains to be proven that this grade can be inferred over the entire area.

##### Coal

A strike length of 28,000 feet is reasonably assured. The major part of this strike length is amenable to open pit mining. On the basis of a 70 foot seam yielding 60% coal and mined down dip to a vertical depth of 150 feet, a total of 10,000,000 tons can be inferred.

The coal from the Company's deposits appears to be ideally suited for the process. The temperature at which fusion of the ash content occurs is well above the operating temperatures required for reduction in the kiln, thus eliminating any tendency for the ash to stick to the walls of the kiln. Furthermore, the coal contains highly volatile hydro carbons which can thus substitute for natural gas used in the process.

WRIGHT ENGINEERS LIMITED

Registered Professional Engineer  
(SEAL)

"K. L. McRorie"  
K. L. McRorie, P. Eng.

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CERTIFICATE

I, Kenneth L. McRorie, of the City of Vancouver, British Columbia do hereby certify that:

1. I am a registered Professional Engineer of the Province of Ontario (Mining) and a member of the Canadian Institute of Mining and Metallurgy.
2. I have practiced my profession for over 25 years with Matachewan Consolidated Mines Limited, Steep Rock Iron Mines Ltd., Western Mines Ltd., and Wright Engineers Ltd.
3. I have personally examined the coal deposit known as the Tulameen Coalfield, but have not examined the Lodestone mining claims, nor the limestone deposit.
4. I have not received, nor do I expect to receive, any interest either directly or indirectly in the properties described herein, or securities of Imperial Metals and Power Ltd. (N.P.L.).

Dated this 3rd day of June, 1966.

"Kenneth L. McRorie"  
Kenneth L. McRorie, P. Eng.

Registered Professional Engineer  
(SEAL)









